**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Cancel claims 2 and 25, amend claims 1, 3, 5, 10, 12, 13, 18, 23, 24 and 26-30 and add claim 35 as follows:

1. (Currently Amended) A method for detecting a shutter opening angle of an adjustable rotating shutter mounted in a film camera which comprises a circular segment or circular sector shaped shutter vane driven through a shutter shaft by a shutter motor, and a shutter adjustment vane mounted coaxial with the shutter vane and adjustable relative thereto by means of a shutter adjustment vane motor, the method comprising:

detecting ~~the position of shutter vane and the shutter adjustment vane during rotation of the rotatable shutter; and~~

~~ascertaining the difference between the two positions as a value, said value being representative of the shutter opening angle of the rotatable shutter (1).~~

an absolute position of the shutter vane and an absolute position of the shutter adjustment vane with a resolution of *n* steps during one revolution of the rotatable shutter,

and determining the shutter opening angle of the rotatable shutter (1) from the equation

$$\alpha = [P_{BF} - P_{VF}] * 360° / n$$

wherein

$P_{BF}$ is the position of the shutter vane and

$P_{VF}$ is the position of the shutter adjustment vane,

wherein when the value of angle α is less than 0° the value is increased by 360° as long as the resulting value is greater than or equal to 0° or when the value of angle α is greater than or equal to 360° the value is reduced by 360° as long as the resulting value is less than 360°.

2. (Cancelled).

3. (Currently Amended) The method according to claim [[2]]1, wherein the absolute positions of the shutter vane and the shutter adjustment are determined using coded sensor tracks.

4. (Previously Presented) The method according to claim 3, wherein the absolute positions of the shutter vane and the shutter adjustment vane are detected as a sine and cosine signal per revolution of the rotating shutter and the shutter opening angle of the rotating shutter is determined through an arctan calculation from the sine and cosine signals.

5. (Currently Amended) The method according to claim 1, wherein the positions of the shutter vane and the shutter adjustment vane are detected incrementally, wherein at least one reference signal is provided per revolution of the rotatable shutter and wherein the detected incremental signals are stored with the [[the]] reference signal and wherein the shutter opening angle (α) of the rotatable shutter is determined from the equation

$$\alpha = (Z_{BF} - Z_{VF} + O[[K]]) * 360/n$$

wherein

$Z_{BF}$ is the counter state of the shutter vane

$Z_{VF}$ is the counter state of the shutter adjustment vane and

O is a constant off-set which is determined from the equation

$$O = I_{BF} + I_{VF} + K$$

wherein

$I_{BF}$ is the index position of the shutter vane

$I_{VF}$ is the index position of the shutter adjustment vane and

K is a calibrating value

wherein when the value of an angle $\alpha$ which is less than 0° the value is increased by 360° as long as the resulting value is greater than or equal to 0° or when the value of an angle $\alpha$ is greater than or equal to 360° the value is reduced by 360° as long as the resulting value is less than 360° and wherein the calibrating value (K) is a correcting value arising from the relationship of a reference mark which is coupled to the shutter vane and a reference mark which is coupled to the shutter adjustment vane, wherein said reference marks are used in generating said at least one reference signal.

6. (Previously Presented) The method according to claim 1, wherein absolute positions of the shutter vane and the shutter adjustment vane are determined from distance-coded reference marks.

7. (Previously Presented) The method according to claim 1 wherein the shutter opening angle value is supplied as an actual value to a shutter adjustment vane position regulating device, wherein an ideal value of the shutter opening angle is manually input, wherein the difference between the ideal and actual value of the shutter opening angle is a setting variable for the shutter adjustment vane motor.

8. (Previously Presented) The method according to claim 1, wherein the positions of the shutter vane and shutter adjustment vane are interpolated before ascertaining the difference.

9. (Previously Presented) The method according to claim 1, wherein a mechanical locking or unlocking of the shutter adjustment vane is determined by scanning at a predetermined frequency and wherein when the shutter adjustment vane is mechanically blocked, a control of the shutter adjustment vane motor is blocked.

10. (Currently Amended) The method according to claim 1, wherein the position of the shutter vane, the position of the shutter adjustment vane [[(3)]], the value of the shutter opening angle of the adjustable rotatable shutter and signals relating to [[the]]a mechanical locking or unlocking of the shutter adjustment vane are processed by a control logic.

11. (Previously Presented) The method according to claim 10, wherein the control logic initialises the detected positions.

12. (Currently Amended) The method according to claim 1, wherein a setting value for the shutter adjustment vane motor is transferred ~~contactlessly~~ by a shutter adjustment vane position regulating device to the shutter adjustment vane motor without contact.

13. (Currently Amended) A device for detecting [[the]]a shutter opening angle of an adjustable rotatable shutter mounted in a film camera which comprises a circular segment or circular sector shaped shutter vane driven through a shutter shaft by a shutter motor, and a shutter adjustment vane mounted coaxial with the shutter vane and adjustable relative thereto by means of a shutter adjustment vane motor, the device comprising:

- a first sensor coupled to the shutter vane for sensing [[a]]an absolute position of the shutter vane and emitting a shutter vane position signal with a resolution of *n* steps during one revolution of the rotatable shutter;
- a second sensor coupled to the shutter adjustment vane [[(3)]] for sensing [[a]]an absolute position of the shutter adjustment vane and emitting a shutter adjustment vane position signal with a resolution of *n* steps during one revolution of the rotatable shutter; and
- a position counter receiving the shutter vane and the shutter adjustment vane position signals;

said position counter [[and]] ascertaining the difference between the shutter vane position signal and the shutter adjustment vane position signal from the equation

$$\alpha = [P_{BF} - P_{VF}] * 360° / n$$

wherein

$P_{BF}$ is the position of the shutter vane and

$P_{VF}$ is the position of the shutter adjustment vane,

wherein when the value of angle $\alpha$ is less than 0° the value is increased by 360° as long as the resulting value is greater than or equal to 0° or when the value of angle $\alpha$ is greater than or equal to 360° the value is reduced by 360° as long as the resulting value is less than 360°.

14. (Previously Presented) The device according to claim 13, wherein the first and second sensors comprise absolute angle measuring instruments with several code tracks mounted on a graduated plate and scanning devices assigned to the code tracks.

15. (Previously Presented) The device according to claim 14, wherein the absolute angle measuring instruments comprise absolute coders, resolvers or pole wheel sensors.

16. (Previously Presented) The device according to claim 13, wherein the first and second sensors comprise incremental angle measuring instruments with a periodic incremental track mounted on a graduated plate and a reference mark track which has at least one reference mark fixing an absolute position of the graduated plate, and scanning devices associated with the incremental and reference mark track.

17. (Previously Presented) The device according to claim 16, wherein the reference mark track has distance-coded reference marks on which reference marks are made with defined variable spacing.

18. (Currently Amended) The device according to ~~at least one of claims 14 to 17~~claim 14, wherein the first and second sensors have graduated plates with sine and cosine tracks and wherein a computing unit connected to an output side of one of said scanning devices

detects sine and cosine signals and issues arctan values calculated from the sine and cosine signals.

19. (Previously Presented) The device according to claim 13, wherein the first and second sensors are absolute or incremental angle measuring instruments comprising photo electric, magneto resistive or permanent magnetic scanning capability.

20. (Previously Presented) The device according to claim 13 further comprising:

- a control logic receiving a signal relating to the difference between the shutter vane position signal and the shutter adjustment vane position signal, wherein the control logic is connected to an interface on a control of the film camera; and
- a shutter adjustment vane position regulating device which receives on an input side a signal relating the difference of the shutter vane position signal and the shutter adjustment vane position signal, and an ideal value issued by the control of the film camera through an interface for the shutter adjustment vane or for the shutter opening angle of the adjustable rotatable shutter, wherein said shutter adjustment vane position regulating device outputs from an output side a setting variable for the shutter adjustment vane motor.

21. (Previously Presented) The device according to claim 13, comprising a safety scanning device for detecting the shutter opening angle of the adjustable rotatable shutter, wherein an output of said safety scanning device is connected to a control logic for issuing absolute values of the shutter opening angle of the adjustable rotatable shutter.

22. (Previously Presented) The device according to claim 20 or 21, wherein the control logic is connected on an input side to a scanning device for detecting mechanical locking of the shutter adjustment vane, wherein the control logic blocks the control of the shutter adjustment vane motor when mechanical locking of the shutter adjustment vane is detected.

23. (Currently Amended) The device according to claim 13, wherein a shutter adjustment vane position regulating device is connected to an amplifier, said amplifier being connected to ~~through a device for controlling the shutter adjustment vane motor to~~ an energy ~~transfer device~~ and [[a]]signal transfer device for controlling the shutter adjustment vane motor.

24. (Currently Amended) The device according to claim 23, wherein the shutter adjustment vane position regulating device is connected ~~through the~~ to an energy transfer device and to a signal transfer device,

said energy transfer device being connected to a motor amplifier, comprising a control device which is connected to a first output of a processor for controlling and regulating the shutter adjustment vane motor,

said signal transfer device being connected ~~as well as through the signal transfer device~~ to [[a]] the processor ~~for controlling and regulating the shutter adjustment vane motor.~~,

said processor being connected to the output of an actual value measuring amplifier,

said actual value measuring amplifier being connected to a potentiometer transmitter coupled to the shutter adjustment vane motor, and

a second input and output of the processor being connected to the signal transfer device.

25. (Cancelled).

26. (Currently Amended) The device according to ~~one of the preceding claims 23 to 25~~ claims 23 or 24, wherein at least one of said energy transfer device and signal transfer device generates a signal and provides for the ~~contactless~~ transfer without contact of said signal.

27. (Currently Amended) The device according to claim [[23]]24, wherein the energy transfer device comprises a divided transformer operated at high frequency having a primary

winding connected to a direct current converter on a primary side and a secondary winding connected to a direct current converter on a secondary side.

28. (Currently Amended) The device according to claim [[23]]24, wherein the signal transfer device comprises an optical transmitter and an optical receptor for bi-directional signal exchange between the shutter adjustment vane position regulating device and the processor.

29. (Currently Amended) The device according to claim [[23]]24, wherein the signal transfer device comprises an inductive signal transfer device for the bi-directional signal exchange between the shutter adjustment vane position regulating device and the processor.

30. (Currently Amended) The device according to claim [[23]]24, wherein the signal transfer device comprises a carrier frequency signal transfer device for the bi-directional signal exchange between the shutter adjustment vane position regulating device and the processor, wherein said carrier frequency signal transfer device modulates and superimposes signals to a carrier frequency the energy supply of the shutter adjustment vane motor.

31. (Previously Presented) The device according to claim 13, wherein a shutter adjustment vane position regulating device controls the shutter adjustment vane motor through a motor end stage and a rotational connection or a slip ring.

32. (Previously Presented) The device according to claim 13, wherein the first and second sensors are coupled to the shutter shaft and to a shutter adjustment vane shaft.

33. (Previously Presented) The device according to claim 13, wherein the shutter shaft is connected to a shutter drive through gearing.

34. (Previously Presented) The device according to claim 13, wherein the shutter adjustment vane is connected to the shutter adjustment vane motor through a shutter adjustment vane shaft and a gearing within the shutter shaft.

35. (New) A method for detecting a shutter opening angle of an adjustable rotating shutter mounted in a film camera which comprises a circular segment or circular sector shaped shutter vane driven through a shutter shaft by a shutter motor, and a shutter adjustment vane mounted coaxial with the shutter vane and adjustable relative thereto by means of a shutter adjustment vane motor, the method comprising:

detecting the position of the shutter vane and the shutter adjustment vane during rotation of the rotatable shutter; and

ascertaining the difference between the two positions as a value, said value being representative of the shutter opening angle of the rotatable shutter, wherein the positions of the shutter vane and the shutter adjustment vane are detected incrementally, wherein at least one reference signal is provided per revolution of the rotatable shutter and wherein the detected incremental signals are stored with the reference signal and wherein the shutter opening angle ($\alpha$) of the rotatable shutter is determined from the equation

$$\alpha = [Z_{BF} - Z_{VF} + O] * 360 / n$$

wherein

$Z_{BF}$ is the counter state of the shutter vane

$Z_{VF}$ is the counter state of the shutter adjustment vane and

O is a constant off-set which is determined from the equation

$$O = I_{BF} + I_{VF} + K$$

wherein

$I_{BF}$ is the index position of the shutter vane

$I_{VF}$ is the index position of the shutter adjustment vane and

K is a calibrating value

wherein when the value of an angle $\alpha$ which is less than 0° the value is increased by 360° as long as the resulting value is greater than or equal to 0° or when the value of an angle $\alpha$ is greater than equal to 360° the value is reduced by 360° as long as the resulting value is less than 360° and wherein the calibrating value (K) is a correcting value arising from the relationship of a reference mark which is coupled to the shutter vane and a reference mark which is coupled to the shutter adjustment vane, wherein said reference marks are used in generating said at least one reference signal.